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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

SECOND CONSULTATION ON THE WOOD AND WOOD PRODUCTS INDUSTRY

Vienna, Austria, 21–25 January 1991

REPORT

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PREFACE

The System of Consultations is an instrument through which the United Nations Industrial Development Organization (UNIDO) serves as a forum for developed and developing countries in their contacts and discussions directed towards the industrialization of the latter countries. Participants in the Consultations include representatives of industry, government, labour, consumer groups and others, as deemed appropriate by the Governments concerned. The System facilitates negotiations among interested parties, at their request, either during or after the Consultation meetings.

Benefits deriving from this activity include the identification of obstacles to industrial development in developing countries; the monitoring of trends in world industry with a view to identifying action-oriented measures for increasing the industrial output of developing countries; and the search for new forms of international cooperation in North-South and South-South relations.

Since the inception of the System 1/ in 1975, Consultations have been held on the following industries and topics: agricultural machinery, building materials, capital goods, electronics, fertilizers, fisheries, food-processing, industrial financing, iron and steel, leather and leather products, non-ferrous metals, petrochemicals, pharmaceuticals, small- and medium-scale enterprises, the training of industrial manpower, vegetable oils and fats and wood and wood products. The System brings together sectoral decision makers to deliberate on and propose concrete measures to accelerate the process of industrialization in developing countries. It has generated many innovations, particularly with respect to technological alternatives, integrated development and contractual arrangements. The many opportunities thus provided have led to the implementation of projects in technical assistance, investment promotion and technology transfer.

The Consultation process, by virtue of its consensual and normative character, has revealed itself to be an efficient vehicle for fostering cooperation. It is eminently suited to assist member countries in the formulation of strategies and policies for industrial development.

The System of Consultations operates under the continuous and close guidance of the Industrial Development Board of UNIDO. In addition to the annual reviews and occasional progress appraisals that it undergoes, the System in 1989 was subjected to an in-depth evaluation, which concluded that it was making a major contribution to the development and formulation of UNIDO policies and programmes in specific sectors through integration and interaction with the Organization's other main activities.

1/ See Report of the Second General Conference of the United Nations Industrial Development Organization (ID/CONF.3/31), chap. IV, "The Lima Declaration and Plan of Action on Industrial Development and Co-operation", para. 66.

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INTRODUCTION

1. The Second Consultation on the Wood and Wood Products Industry was held at Vienna, Austria, from 21 to 25 January 1991. The Consultation was attended by 75 participants from 39 countries and 10 international and other organizations (see annex I). The Consultation was sponsored by the United Nations Centre for Human Settlements (Habitat) and the United Nations Industrial Development Organization (UNIDO).

Background to the Second Consultation

2. The First Consultation on the Wood and Wood Products Industry, which was held at Helsinki, Finland, in 1983, 1/ dealt with the problems of the development of the primary and secondary wood-processing industries and measures to promote the use of wood and wood products in the housing and construction industry. The First Consultation recognized the need to emphasize the development of the secondary wood-processing industry since that industry was generally far less advanced in developing countries than was the primary wood-processing industry. Furthermore, as the secondary wood-processing industry was labour-intensive, its promotion would generate employment and help to improve living conditions, particularly in rural areas.

3. The Industrial Development Board, at its fourth session, in October 1988, recommended that the Second Consultation on the wood and wood products industry should be held during the biennium 1990-1991. 2/

4. In preparation for the Second Consultation, the UNIDO Secretariat carried out regional surveys and background studies on the situation of the industry. The results of those surveys and studies were presented at the expert group meeting for the Latin American region, held at Guarujá, Brazil, from 4 to 6 December 1989; 3/ the expert group meeting held at Vienna, Austria, from 4 to 7 December 1989; 4/ and the global preparatory meeting held at Nairobi, Kenya, from 24 to 27 April 1990. 5/

5. The objectives of the preparatory meetings were:

(a) To discuss the present situation of the wood and wood products industry, with special emphasis on the secondary wood-processing industry;

1/ Report of the First Consultation on the Wood and Wood Products Industry, Helsinki, Finland, 19-23 September 1983 (ID/306, ID/WG.395/10).

2/ "Report of the Industrial Development Board on the work of its fourth session" (GC.3/2), annex I, IDB.4/Dec. 8.

3/ "Report of the Regional Meeting for Latin America in preparation for the Second Consultation on the Wood and Wood Products Industry", Guarujá, Brazil, 4-6 December 1989, ID/WG.500/3(SPEC.).

4/ "Report: Expert Group Meeting on the Wood and Wood Products Industry", Vienna, Austria, 4-7 December 1989, IPCT. 105(SPEC.).

5/ "Report: Global Preparatory Meeting for the Second Consultation on the Wood and Wood Products Industry", Nairobi, Kenya, 24-27 April 1990, ID/WG.500/9(SPEC.).

(b) To identify common and specific constraints that hamper the development of the industry in developing countries, such as raw materials availability, technology management, training, financing and environmental considerations;

(c) To examine and propose ways and means for international cooperation and action needed to overcome identified constraints;

(d) To select specific issues for further elaboration to be discussed at the Consultation.

6. Taking note of the complexity and the wide range of problems facing the wood and wood products industry, the preparatory meetings concluded that the following issues were of particular importance to the progress of this sector in developing countries and should be addressed by the Consultation:

Issue 1: Measures to strengthen an environmentally sound, sustainable supply of timber resources

Issue 2: Greater utilization, on a sustainable basis, of wood, including commercially less-accepted species and plantation species, as a source of indigenous building material in housing and construction

Issue 3: Prerequisites for the integrated development of the secondary wood-processing industry

AGREED CONCLUSIONS AND RECOMMENDATIONS

Issue 1: Measures to strengthen an environmentally sound, sustainable supply of timber resources

Conclusions

7. Forests are unanimously recognized as a renewable resource that should be exploited by countries for the good of their people. While acknowledging the sovereignty of each country in disposing of its forest resources, the participants stressed the influence of forests on the global environment, for example, on climatic change, and the consequent need for international cooperation in this area. The Consultation agreed on the following conclusions:

(a) There is an urgent need to slow the rate of deforestation. In tropical regions, such deforestation is largely the result of shifting cultivation and the unmanaged harvesting of fuelwood. The principles of optimal land use should be kept in mind;

(b) The unmanaged exploitation of the forest for the production of industrial timber can contribute to deforestation. Under proper, sustainable, environmentally sound management, industrial use of the forest can be the best hope for slowing the rate of deforestation;

(c) The protective and social functions of forests are important. In most cases, these functions, which environmental groups are fighting to preserve, are consistent with the use of the forests for timber production;

(d) While the supply of industrial wood on a global level is adequate into the foreseeable future, there are and will continue to be local and regional imbalances. These imbalances can, however, be corrected by international trade in industrial wood and wood products.

(e) The adequacy of the future global industrial wood supply depends on the proper management of the natural forest and the continued expansion of plantations to supplement supplies from the natural forest. Plantations, while only a small part of the total forest area, are expected to contribute over half of all industrial volume by the middle of the next century;

(f) Properly designed and implemented technical assistance, investment promotion and training projects in the secondary wood products industry should be encouraged and are not at variance with sound environmental policy;

(g) Forests are not currently being used appropriately. The appropriate utilization of forests can slow the rate of deforestation and help to create a better life for people, especially in the developing countries;

(h) Measures to reduce waste in both the harvesting and processing of wood, together with the recycling of wood and paper products, can greatly increase the contribution of the existing wood supply to industrial uses. As an example, much valuable wood is presently wasted when it is disposed of after having been used only once or twice in temporary construction works.

Recommendations

8. The Consultation recommended the following:

(a) Governments should work toward the development and implementation of land use policies that would ensure that forests are converted to other uses only if such conversion is in the overall national interest;

(b) Such land use policies should encompass effective forest management planning to ensure that forests are managed and used appropriately. The technical assistance being provided by international organizations in planning the forestry sector, especially within the framework of the Tropical Forest Action Plan of the Food and Agriculture Organization of the United Nations (FAO), was recognized and encouraged. UNIDO should contribute by assisting secondary wood-processing industries and by ensuring that these industries are properly matched to the supply of timber resources;

(c) In view of the overlapping interests of environmental groups and the timber industry, the International Tropical Timber Organization (ITTO), an intergovernmental organization, and other international organizations should continue to provide forums where common plans of action can be worked out;

(d) Because of the importance of international trade in balancing the supply and demand for wood and wood products, the regional commissions of the United Nations, FAO and the International Trade Centre of the United Nations Conference on Trade and Development/General Agreement on Tariffs and Trade UNCTAD/GATT should continue to disseminate market information, to prepare marketing studies and to provide training in the marketing of wood and wood products;

(e) International organizations such as Habitat, FAO, UNIDO, International Trade Centre UNCTAD/GATT were encouraged to continue to assist developing countries in carrying out studies relating to wood product end uses and markets. Such studies would help them to direct their forest resources, including commercially less-accepted species, towards their most appropriate applications;

(f) UNIDO and other international organizations should strengthen their efforts to promote the more efficient utilization of wood, both by measures that reduce waste in harvesting and processing and by measures that increase recycling. For example, Habitat, UNIDO and other organizations should ensure training for construction managers in the proper care and recycling of wood materials such as the shuttering used in temporary works;

(g) Habitat, FAO, UNIDO and other international organizations should continue to provide technical assistance and training in the more efficient use of fuelwood and other energy resources and to promote and encourage the use of energy other than fuelwood whenever feasible.

Issue No. 2: Greater utilization, on a sustainable basis, of wood, including commercially less-accepted species and plantation species, as a source of indigenous building material in housing and construction

Conclusions

9. The Consultation agreed on the following conclusions:

(a) There is an urgent need for greater efforts to promote commercially less-accepted species and plantations and to provide more funding for research and, particularly, the dissemination of technical information. When national building codes are adopted, they should take into account the merits of wood as a building material;

(b) The environmentally sound management of tropical forests is important. Particularly important is the contribution that commercially less-accepted species and plantation species can make to the greater use of wood in construction, including housing, in the context of the Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in its resolution 43/181. It is recognized that the commercial acceptance of species varies, depending on whether the market in question is a local or national market or an export market;

(c) Among the considerable barriers to the greater use of timber for construction are strong cultural traditions as well as various technical and infrastructural constraints. Research and development in this area must be undertaken with the full participation of industry and guided by its requirements as well as those of the public. Marketing and the profit motive are seen as very important factors in the acceptance of the technologies and concepts developed;

(d) A natural sequence exists, beginning with development of and agreement on stress-grading rules and proceeding through the training of visual stress-graders and operators of stress-grading and proof-testing machines, the introduction of quality control and, finally, quality assurance procedures for stress-graded sawnwood. This sequence must run in parallel with the creation of demand for stress-graded material to be used structurally as individual members or for structural building components such as trussed rafters;

(e) Insufficient attention has been paid to the appropriate marketing of wood and wood products and to supporting trade policies and infrastructure. Higher quality building products will only be produced as a result of user or consumer pressure, and this is related to higher living standards and expectations. Encouraging examples of marketing functions are distribution centres for wood products and various demonstration projects. The marketing of wood and wood products has to be carried out in a comprehensive manner, recognizing the various components of marketing: product quality, channels of distribution, promotional activities, technical services and pricing. In particular, distribution centres have to encompass a variety of activities and services: collecting sawnwood from sawmillers in the region, grading, sorting, drying, treating with preservatives as necessary, providing technical information to customers, assisting producers and users with product development and promoting the rational use of wood;

(f) Many demonstration projects have failed to provide for follow-up or for an evaluation of their cost-competitiveness, which would probably ensure their successful replication. Private sector involvement is essential for success in such ventures;

(g) In most developing countries, building legislation is inappropriate and does not recognize wood as a durable construction material. This has prevented banks and other financial institutions from supporting the use of wood in construction. Networking within and between regions is important, especially for the transfer of appropriate technology and information on

technologies for the conversion and use of rubber wood, coconut wood and bamboo.

Recommendations

10. The Consultation recommended that:

(a) Governments and wood and wood products industries, with the support of international organizations such as Habitat, FAO, the International Trade Centre UNCTAD/GATT and ITTO should be encouraged to set up market information services and carry out market studies and housing need surveys to support the increased use of commercially less-accepted species and plantation species in housing and construction in developing countries;

(b) With regard to technical information and standards:

(i) Research institutions should give high priority to improving the quality of technical information on the use of wood, particularly commercially less-accepted species and plantation species, in construction and in effectively disseminating such information to designers, builders, specifiers and end-users in the construction industry;

(ii) National standards organizations in developing countries, taking into account the standards set by the International Organization for Standardization (ISO), should promote effective and clear wood construction standards or codes for grading, dimensioning, preservation and fire safety. Efforts should be made to draw upon the experience of the developed countries in this area;

(c) Government agencies should closely associate the private sector in demonstration projects, which should be organized at the appropriate scale, at strategic locations, and should be intensively followed up for replication elsewhere;

(d) Developing countries should enact adequate legislation, supported by standards, building codes, quality control and product certification, with a view to persuading banking and insurance agencies to finance or promote, in both the private and public sectors, the greater use of wood, particularly commercially less-adapted species and plantation species, in housing and construction;

(e) Governments and international organizations such as Habitat, FAO, the World Bank, UNIDO and ITTO should provide stronger technical support and financing to research programmes that would lead to the greater use of wood in construction, especially programmes aimed at overcoming the problems related to the utilization of commercially less-accepted species and plantation species. Such support should also include the effective dissemination of the research results;

(f) Efforts should also be made by Governments and international organizations to support twinning arrangements between research institutes in developed and developing countries, as well as between institutes in developing countries. Such cooperative programmes should draw on the information available in the data bank on twinning opportunities developed by UNIDO with the assistance of the International Union of Forestry Research Organizations (IUFRO);

(g) Governments, international organizations and industry should support networking within and between regions for the transfer of technology and information relating specifically to the conversion and use of rubber wood, coconut wood and bamboo in construction;

(h) International organizations such as Habitat and UNIDO should continue to produce practical manuals and design and training aids on standard buildings, building components and structures for wide circulation in developing countries. Efforts should also continue to make civil engineers and architects more familiar with the potential for using wood in construction and with design procedures; these efforts should be carried out in collaboration with Working Commission W18B of the International Council for Building Research Studies and Documentation (CIB) and other similarly oriented international agencies and professional groups.

Issue No. 3: Prerequisites for the integrated development of the secondary wood-processing industry

Conclusions

11. The Consultation agreed on the following conclusions:

(a) The participants recognized the importance of defining a national industrial policy for the wood sector as a whole, from raw materials to finished products;

(b) In the least industrialized countries, development programmes must be established in the wood sector as part of an integrated approach (forest resources, local and regional markets, human resources, financial resources, level of infrastructures, choice of technologies etc.) that involves collaboration between the public and private sectors;

(c) Nowadays, new technologies are marketed in the form of technological "packages" that often include equipment, components, know-how and even design. The choice of the most effective package, taking account of local constraints, and, above all, the adaptation of the technology to the existing environment are the real problems facing the developing countries. This requires, for example, an adequately developed infrastructure, trained personnel at all levels, effective after-sales service by suppliers and compatibility between technical capacity and upstream and downstream sectors;

(d) The activities of research centres in developing countries must be oriented towards (a) industrial development, (b) the search for new technologies and (c) the adaptation of technologies already in place in developed countries to the constraints of local industry and/or the characteristics of available raw materials;

(e) It would be desirable to develop North-South and South-South cooperation between research centres. Specific research objectives could include the utilization of wastes, by-products and small-diameter logs or the development of simple systems for (a) drying (solar driers, multi-purpose driers, multiple driers), (b) making wood more durable and (c) the processing of small-diameter logs;

(f) There is a need for innovative approaches to the dissemination of information on technologies, materials and the properties of commercially

less-accepted species as well as information on possibilities for the utilization of small-diameter logs, natural forest and plantation brushwood;

(g) Industrialization should take into account the real needs of a country and the financial implications thereof and should above all pay particular attention to human problems, so that the industries proposed are appropriate to the social, economic and cultural conditions in a particular country;

(h) While the use of obsolete technology or equipment to manufacture products intended for export markets may adversely affect quality and productivity, in certain cases the acquisition of second-hand, possibly reconditioned equipment may be a means of reducing initital investment;

(i) The replacement of polluting technologies by new, more environmentally sound technologies is a priority;

(j) Small and medium-sized enterprises could benefit from the establishment of productivity centres that would disseminate technical information, research findings and more appropriate technologies; control quality and encourage the establishment of workshops providing common services (grinding, drying etc.); and provide management assistance. The management of these centres could be State, private or mixed;

(k) The existence of local consulting engineers' offices seems to be a driving force for the development of wood working industries and in particular the secondary wood-processing sector;

(l) The training effort may be undermined when trainers transfer to the industrial sector and when trained personnel are assigned to functions requiring other skills. As a result there may be an acute shortage of qualified trainers in developing countries. It has also been established that existing programmes are, in the majority of cases, mainly aimed at artisanal production and are inappropriate or not very appropriate to the needs of a growing industry;

(m) In most developing countries, the importance of the functions of technicians, skilled foremen and specialists has not been recognized. Consequently, there are few or no programmes for their training. The same applies to grinders, drier operators, classifiers, quality controllers and other skilled workers;

(n) The creation and distribution of technical information (courses, descriptions of manufacturing processes etc.) using video methods can reduce training costs and increase the number of training activities;

(o) It is sometimes difficult for enterprises to release personnel for training courses because their absence might affect the work;

(p) There is a need to train more maintenance specialists, perhaps in mobile and multi-purpose pilot units;

(q) There are various possibilities for financing training, and it would be advantageous for industry to participate not only financially but also in the preparation of the training programmes;

(r) With regard to the application of standards, several things are important:

(i) To comply with international requirements concerning products for export;

(ii) To establish national standardization documents, taking account of local industrial constraints and the interests of consumers in order to facilitate the application of the documents;

(iii) To use international standards as a basis for national standards and to revise national standards in order to gradually attain international standards;

(s) Standards are needed for the quantitative, dimensional etc. control of imported products and equipment;

(t) The application of qualitative and dimensional standards can facilitate the use of wood in construction;

(u) The existence of quality labels has facilitated the export of sawn timber from tropical zones. Likewise, the labels have made it easier to export manufactured products from developed countries. The success of the label naturally requires the compliance of professionals as well as the preliminary training of classifiers, inspectors and controllers. For manufactured products, appropriate control equipment must be acquired and installed;

(v) The cost of maritime shipping, particularly the cost of loading in certain ports owing to poor port organization or inflexible work schedules, is very high;

(w) The development of the secondary processing sector is restricted owing to the lack of credit opportunities for entrepreneurs, most of whom are still at the micro-industrial stage;

(x) Partnership activities facilitate the transfer of technology, access to markets etc. They also create mutual confidence, which makes it easier to attract foreign capital and arrange for credits.

Recommendations

12. The Consultation recommended as follows:

(a) In countries with little or no industrialization, international organizations, particularly FAO and UNIDO, should encourage the development of integrated industrialization programmes in the wood sector;

(b) UNIDO should promote international North-South and South-South co-operation between research and development centres. This cooperation could consist, for example, of (a) the exchange or loan of research equipment, (b) the exchange of technical or commercial information, (c) the exchange of researchers and/or trainers or (d) subcontracting;

(c) Governments should ensure that imported technologies are environmentally sound;

(d) Based on past experience, international organizations should promote and encourage the establishment of productivity centres with the functions described above and should set up pilot units, disseminating their results widely;

(e) Governments should include commercially less-accepted species in forest inventories, disseminate existing technical documentation on the subject more widely and have it included in technical documents (standards, specifications etc.);

(f) Governments and international organizations should attach greater importance to the training of trainers, specialists and managers;

(g) International organizations should establish and keep up-to-date files on relevant training programmes (organization, nature, duration, cost etc.) and on audiovisual resources (title, duration etc.);

(h) The international organizations concerned should encourage the production of audiovisual teaching materials, particularly videos, and ensure their distribution to both training organizations and enterprises;

(i) National standards institutes, jointly with other interested parties (industry, consumers, government ministries etc.), should attach greater priority to the development of standards for their wood products, bearing in mind the possibilities and constraints of local industries. Such standards would make it possible to introduce quality labels, which would not only promote the utilization of wood in construction but also facilitate local and international transactions;

(j) UNCTAD should encourage industrialists in the wood sector to participate actively in the work of the shippers' councils created on the recommendation of that organization;

(k) UNIDO should step up the dissemination of information from its database on investment conditions in various countries;

(l) UNIDO should study, with international financial agencies, the possibilities for establishing mutual guarantee funds to facilitate the financing of small and medium-sized enterprises and for making credits available for the launching of pilot operations;

(m) UNIDO should intensify the development of partnership programmes and support promotional campaigns to encourage foreign investment;

(n) Governments should promote a legislative and industrial environment favourable to investments.

I. ORGANIZATION OF THE CONSULTATION

Opening of the Consultation

13. The Second Consultation was addressed by the Deputy Director-General for Administration on behalf of the Director-General of UNIDO. He referred to the important role of the wood and wood products industry in the economic development of many developing countries and the technical cooperation programme of UNIDO in that sector.

14. There was, however, increasing concern about the destruction of tropical forests and the adverse impact on the environment. Inefficient commercial logging operations, the conversion of forested areas to cattle ranching and agriculture and the use of wood as fuel had aggravated the problem. There was thus a clear need for improved forest management, as had been recognized by several Governments. The approach took into account environmental concerns while simultaneously permitting sustainable economic benefits. He drew the attention of the participants to the issues before the Consultation and stated that UNIDO recommended the promotion of industrial policies aimed at improving the processing and efficient use of wood, in particular the utilization of wood in the construction industry as a measure to reduce dependence on imported building materials and increasing the value-added of wood products in developing countries through the establishment and development of secondary wood-processing industries.

15. The Deputy Director-General expressed appreciation for the cooperation received from other United Nations agencies, especially Habitat, in the preparation and organization of the Consultation.

16. A representative of Habitat addressed the Consultation on behalf of the Executive Director of that organization. He paid tribute to the continuing collaboration between UNIDO and Habitat, as evidenced by the Consultation and also by the First Consultation on the Building Materials Industry, held at Athens, Greece, in 1985.

17. Habitat regarded the holding of the Second Consultation on the Wood and Wood Products Industry as important, particularly in the light of the adoption by the General Assembly, in its resolution 43/181, of the Global Strategy for Shelter to the Year 2000. Many Governments were formulating and implementing strategies for adequate shelter for their people, and the provision of building materials played a central role in those strategies. Various studies had revealed the increasing dependence on imported building materials in many developing countries and the resultant strain on foreign exchange resources. The latter had led to inflationary pressures and acute housing shortages in those countries. At the same time, with increasing urbanization, the potential demand for housing construction was growing rapidly. It was in that context that the introduction of affordable building materials such as wood, especially of commercially less-accepted species and plantation species, assumed particular importance.

18. The representative of Habitat also referred to the impact of environmental issues on the wood and wood-processing industry. He referred to strong environmental lobbies in some developed countries actively working against the import of tropical wood products unless they could be creditably shown to come from forests managed for sustained yields. He pointed out that the primary causes of the destruction of tropical forests were shifting cultivation, the

clearing of land for agriculture and the use of wood as fuel. In contrast, the extraction of timber for industrial uses from forests grown and harvested on a planned basis could be carried out on a sustainable basis. Wood was also viewed as an environmentally friendly building material. He drew the attention of the participants to the policy options and the institutional strengthening and promotional measures contained in the paper on issue 2 (see annex II), which had been prepared by Habitat.

19. The Director of the System of Consultations emphasized the need to address the increasing global concern about the overexploitation of natural resources. All countries should adopt measures to halt deforestation, which might lead to major ecological catastrophes. New policies on the use of forest products were required; they should aim to reduce the use of fuelwood and to increase the recycling of wood products and the control and regeneration of harvested timber. Developing countries should also put more emphasis on the production of value-added products through the establishment of secondary wood-processing facilities. Ecological considerations in forest management might increase the cost of raw materials, which would in turn require the development and use of more sophisticated technologies for the secondary wood-processing industry.

20. He said that one of the objectives of the System of Consultations was to serve as a forum for all countries to discuss the problems of industrialization in developing countries and to reach agreement by consensus on the most effective ways and means of solving those problems. UNIDO was strongly committed to the promotion of international cooperation in solving development problems. Such cooperation included trade, technology transfer and joint ventures.

21. He expressed his appreciation for the continuing cooperation between UNIDO and Habitat in the wood and wood products sector.

22. Staff of the Department of Industrial Operations described the main features of the UNIDO technical cooperation programme in the wood and wood products industry. That programme was based on an agreement between FAO and UNIDO whereby FAO was responsible for forestry, i.e. silviculture, inventory, logging and primary wood processing such as the production of sawnwood and plywood, and UNIDO was responsible for the secondary wood-processing industry, i.e. the production of furniture, joinery, housing and the structural uses of timber.

23. The technical cooperation programme covered mainly ad hoc assistance at the plant level and manpower development but also projects in sectoral planning/surveys, feasibility studies, the establishment of common services and testing facilities and technology development and adaptation. The main objectives of the UNIDO technical cooperation programme were as follows:

(a) To promote the more efficient use of forests by utilizing a wider range of species;

(b) To minimize wood waste in all industrial operations;

(c) To protect the environment;

(d) To enhance the value of wood products by the introduction, development and adaptation of appropriate technologies;

(e) To generate employment and improve living standards;

(f) To rehabilitate production units.

24. The technical cooperation programme was supplemented by training courses, publications, information and promotional activities such as consultations and expert group meetings.

25. The Director of the Industrial Technology Promotion Division informed the participants about the activities of that Division, which were oriented towards strengthening the ability of developing countries to develop, acquire, negotiate and manage technologies. The Division managed the Industrial and Technological Information Bank (INTIB), which generated the information needed by developing countries to select the right technology for their industrial development. Preliminary work had started on the inclusion in INTIB of information on the wood and wood products industry. The Division also operated the Technological Advisory Services Programme, which dealt with technology acquisition through contractual arrangements.

26. A representative of the Industrial Investment Division described the functions and modus operandi of that Division as well as specific activities undertaken in the wood sector. The functions of the Division were oriented towards the realization of investment projects under partnership arrangements. The Division offered assistance to private entrepreneurs in developing countries who were involved in the creation, rehabilitation and modernization of industrial production facilities and who sought foreign partners for equity participation, marketing agreements, technology transfer or management services.

27. In the wood sector, the Division was promoting a number of investment projects in Africa. The projects involved the establishment of new production units as well as the modernization of existing wood-processing industries. Partnership arrangements had been forged between the African entrepreneurs and investors from an industrialized country.

Election of officers

28. The following officers were elected:

Chairman: Abbas Adhar (Indonesia), President Director, PT International Timber Corporation

Rapporteur: Geoffrey Pleydell (United Kingdom), Geoffrey Pleydell Market Development and Information Services

Vice-Chairmen: Amantino Ramos de Freitas (Brazil), Head, Wood Division, Instituto de Pesquisas Tecnológicas do Estado de São Paulo

Bernard Parant (France), Chef du programme technologies du bois, Centre technique forestier tropical

Bai-Mass M. Taal (Gambia), Director, Forest Department

Adoption of the agenda

29. The Consultation adopted the following agenda:

1. Opening of the Consultation
2. Election of Chairman, Vice-Chairmen and Rapporteur
3. Adoption of the agenda and organization of work
4. Presentation of the issues
5. Discussion of the issues
6. Drawing up of conclusions and recommendations
7. Adoption of the report of the Consultation

Establishment of working groups

30. The Consultation established two working groups to discuss the issues and to propose conclusions and recommendations for consideration at the final plenary. Amautino Ramos de Freitas chaired the working group on issues 1 and 2. Bernard Parant chaired the working group on issue 3.

Documentation

31. The documents issued prior to the Consultation are listed in annex II.

Adoption of the report

32. The report of the Second Consultation on the Wood and Wood Products Industry was adopted by consensus at the final plenary on 25 January 1991.

II. REPORT OF THE PLENARY SESSIONS

Presentation of the issues

Issue 1: Measures to strengthen an environmentally sound, sustainable supply of timber resources

33. The representative of the FAO introduced issue 1, measures to strengthen an environmentally sound, sustainable supply of timber resources. Available projections showed that while the global adequacy of timber supply seemed assured through the first quarter of the next century, shortages were foreseen for specific countries and regions. The main threats for tropical forests remained slash-and-burn agriculture and unmanaged fuelwood harvests. The development of plantations and the use of underexploited species on an ecologically sustainable basis were some of the measures that would help to ensure an adequate supply of timber in the next century. ITTO had decided that by the year 2000, all tropical timber traded internationally should come from forests set up on a sustainable yield basis. That decision was an important initiative aimed at stopping the erosion of tropical forests while allowing timber users adequate time to make the necessary adjustments. Those measures should be accompanied by the sustained efforts of the industrialized countries to control environmental threats to forests, such as acid rain.

Issue 2: Greater utilization, on a sustainable basis, of wood, including commercially less-accepted species and plantation species, as a source of indigenous building material in housing and construction

34. A representative of Habitat introduced issue 2, greater utilization, on a sustainable basis, of wood, including commercially less-accepted species and plantation species, as a source of indigenous building material in housing and construction. He described the significance of wood in housing and construction in developing countries. Imports of building materials had increased very rapidly in some of those countries, many of which were also faced with a severe scarcity of foreign exchange. That situation had led to high inflation rates, which in turn had suppressed the effective demand for building materials even in the face of acute housing shortages.

35. In the many countries in which it was an indigenous product, wood could play a much bigger role in housing and construction, thus helping to alleviate the housing shortage. In that respect, commercially less-accepted species and plantation species should also be utilized in accordance with ecologically sound forest management practices. However, the increased use of wood for housing and construction in developing countries faced a number of barriers, including prejudices, a lack of technical information, a lack of technology and an inadequate industrial infrastructure. Those constraints, among others, would have to be addressed to achieve greater wood utilization in the housing and construction industries of developing countries. It was also necessary to assess the effectiveness of various demonstration projects on the use of wood in housing and construction as well as constraints on the use of prefabricated components. The reorientation of civil engineering curricula to give more importance to timber engineering might also be required. In the light of growing restrictions on imports, the development of the primary and secondary wood-processing industries would increasingly depend on the development of the domestic market.

Issue 3: Prerequisites for the integrated development of the secondary wood-processing industry

36. A representative of the UNIDO Secretariat introduced issue 3, prerequisites for the integrated development of the secondary wood-processing industry. The very small contribution of developing countries in that sector was evidenced by the fact that, in 1985, only 9 per cent of the world's production, valued at about $US 84 billion, came from those countries. The sector could, however, play a far greater role in the economies of many developing countries because it was labour-intensive. The integrated development of the secondary wood-processing industries required actions with respect to policy and strategy formulation, technology, human resources, standards and quality control, transport, finance, trade and environmental awareness.

37. At the national level, the representative emphasized the need for coordinating policy between forest resource development agencies and the wood-processing industries. The introduction of less-known species might also require the use of new technologies by the wood-processing industries. Demands for environmentally sustainable timber supplies would increase the cost of forest management and thus the cost of raw materials for the processing industries. More sophisticated technologies for productivity improvement would be required to ensure competitiveness in the markets. The provision of national standards and testing facilities would enhance the reputations of producers.

Summary of discussion

38. The representative of the International Trade Centre UNCTAD/GATT addressed the plenary. He enumerated some of the major developments that had affected the wood and wood products industry since the holding of the First Consultation, in 1983. Among those developments were the radical changes in timber trade flows as a result of increased exports from the downstream wood-processing industries of some developing countries, particularly those in South-East Asia. Several of these countries had also introduced measures to phase out the exportation of logs and sawnwood. Another development with profound implications for the future of the industry in developing countries was mounting public concern for environmental issues, particularly the conservation of tropical rain forests. That concern has put Governments and international organizations under pressure to reduce or even totally ban imports of tropical wood products. Such policies could have grave consequences for the wood and wood products industry in developing countries unless those countries stepped up efforts to manage their tropical forests on the basis of ecologically sound practices.

39. The representative of the International Trade Centre UNCTAD/GATT drew the attention of the participants to new international activities in the wood products field, such as the ITTO, the Tropical Forestry Action Programme of the FAO and the United Nations Conference on Environment and Development (General Assembly resolution 44/228), scheduled to take place in Brazil in June 1992. There was a clear need to coordinate those activities to ensure coherence and avoid overlapping. He described the contribution of the International Trade Centre UNCTAD/GATT in fostering the trade promotion efforts of developing countries in the sector, including specific activities emanating from the recommendations of the First Consultation. The International Trade Centre UNCTAD/GATT had published market information to assist developing countries in their efforts to develop the wood and wood products industry.

40. A participant from one developing country described the development of the wood and wood products industry in that country during the 1980s. He stated that although his country had imposed a total ban on the export of logs in 1985, log production had increased slightly over the decade owing to rapid growth in the domestic primary and secondary wood-processing industries. Those downstream industries had made significant breakthroughs in the export markets, especially those for plywood, moulded articles and furniture, all of which had higher value-added than logs. The export earnings of the sector, as well as the number of people it employed, had increased significantly. In further efforts to encourage the export of higher value-added products, his country had banned the export of raw rattan and increased export taxes on sawnwood. An ambitious timber plantation programme had been launched to ensure steady supplies for the projected growth of the industry, which played a key role in the economy. The evolution of the country's forest industry had created 250,000 new jobs.

41. A participant from one developed country expressed the willingness of her country to cooperate with developing countries in the transfer of technology, including technology for those wood species that were still underexploited. She expressed her country's support for UNIDO activities in the sector, including those carried out by the Industrial Investment Division.

42. Some participants described the status of the wood and wood products industry in their countries. The use of wood as fuel was said to be a major factor in deforestation and a threat to timber supplies.

43. Wood and timber centres in developing countries could play a priming role, and UNIDO was requested to support their creation. Such centres should be linked to similar centres operating in industrialized countries to facilitate the transfer of technology, the dissemination of research findings and the provision of technical information.

44. Several participants observed that although on a world-wide basis sufficient wood was available, there were regional deficits.

45. One participant pointed out the differences that sometimes arose between the interests of developing and developed countries. Developing countries having fragile economies but endowed with forest resources often had no alternative but to exploit those resources for their economic survival. The availability of appropriate alternative energy technologies would reduce the demand for wood as a fuel. The South-South cooperation on technologies for the utilization of different wood species should be encouraged.

46. Concern was expressed about the long time that had elapsed since the First Consultation on Wood and Wood Products Industry, in 1983. Some participants felt that Consultations in the sector should be held at shorter intervals because so many important developments were taking place, especially with regard to environmental concerns.

47. A participant from an industrialized country underscored the importance of creating and sustaining a favourable investment climate in developing countries. Domestic markets for the secondary wood-processing industry should be developed before foreign markets were sought. Good marketing skills and a knowledge of quality and the design requirements of the importing country were prerequisites for successful export operations for highly refined wood products.

48. Participants reiterated the urgent need to harmonize the policies of various international organizations in the sector, because there were risks of overlap and duplication.

49. Several participants emphasized the role of forest management, the development of plantations and the use of commercially less-accepted species in ensuring the availability of raw materials for the sector. Owing to transport problems, production units should in so far as possible be established close to the forests or plantations. The training of wood specialists should be undertaken at those local facilities. The idea of setting up pilot projects, which had been discussed at the First Consultation, in 1983, was given further support by many participants.

50. One participant from a developed country said there was an accumulation of second-hand wood-processing equipment in his country that might be purchased at reduced prices.

51. The representative of FAO described the Tropical Forestry Action Programme launched by that organization in 1985 in collaboration with the United Nations Development Programme (UNDP), the World Bank and the World Resources Institute. The Programme provided a framework for coordinated action to improve the living conditions of people dependent on the tropical forests through conservation and the sustainable use of the resource. FAO was also promoting the adoption of an international convention on the conservation and development of forests. The Programme worked by a process of country reviews to identify the forest sector needs of the individual countries. Subsequently, it sought to find the resources to meet those needs.

Resolution on the System of Consultations

52. The following resolution, submitted by the participants from Belgium, France and Germany, was adopted by consensus at the final plenary on 25 January 1991:

The Second Consultation on the Wood and Wood Products Industry,

Stressing the importance for international understanding and cooperation of the very broad exchanges of views between countries which the System of Consultations makes possible,

1. Urges the Secretariat of UNIDO to implement an operational plan of action based on the present recommendations and call for an immediate follow-up with a view to a later consultation. This follow-up should include the conduct of pilot projects or demonstrations in developing countries as part of UNIDO technical cooperation activities in addition to the mobilization of financial resources, the development and transfer of related technology and the development of human resources;

2. Requests the Secretariat to report the results of these actions to the participants in the Consultation.

III. REPORT OF THE WORKING GROUP ON ISSUE 1: MEASURES TO STRENGTHEN AN ENVIRONMENTALLY SOUND, SUSTAINABLE SUPPLY OF TIMBER RESOURCES

53. Recognizing wood as a renewable resource, the participants said there was a surplus of industrial wood, but serious deficits occurred at regional and local levels.

54. One participant stressed the important and integral part that wood played in virtually all societies. If wood was not readily available, it had to be imported. The value had to be fully recognized and the forests properly managed and protected. He also noted that the Consultation was industry-oriented and that silvicultural systems did exist to ensure a long-term, sustainable supply of wood to industry.

55. Participants recognized that the use of wood for fuel was a major cause of deforestation. One participant pointed out that, in his experience, most conferences actually discouraged the use of wood as an industrial raw material.

56. There was some discussion about the causes of deforestation and the advisability of removing a number of essentially unmarketable trees to gain access to a single marketable tree. It was also mentioned that the Overseas Development Agency of the United Kingdom of Great Britain and Northern Ireland was funding a study to look into that on a global basis.

57. Another participant pointed out that environment groups were very strong and dedicated to reducing the destruction of natural forests. He described the "Forests Forever" campaign initiated by the United Kingdom and hoped that other countries would take similar measures.

58. The Tropical Forestry Action Plan initiated by FAO would help countries to develop forestry plans by identifying the issues, discussing how to involve national organizations and prepare long-term plans and generating support from donor countries. One participant noted that one main concern of the Plan was the creation of fuelwood plantations.

59. There were various suggestions as to how the natural forest should be protected, from the encouragement of agro-forestry methods to the creation of buffer zones that would keep out migrant agricultural activities.

60. Regarding the changing resource base, there was much discussion about the value of plantations and the need to ensure that they were designed or created bearing in mind the long-term end uses. It was especially important to plan them so they would produce the right species for use in construction.

61. Participants pointed out that considerable research would be needed to ensure that the species selected were correct for the soil and climate and any other conditions.

62. Some participants noted that many plantations had been established to supply pulp and paper mills, and they suggested that such plantations should be evaluated with a view to diversifying their activities to include the production of solid wood products and manufactured items such as furniture. That would entail choosing the better logs for higher value purposes than pulping.

63. It was suggested that groupings or consortia of furniture manufacturers or building contractors, or even government ministries involved with wood used for construction, could establish plantations with those higher value uses in mind. Although it was thought that considerable volumes of undervalued roundwood were available globally, no hard data were known to exist.

64. One participant suggested that in large investment projects, at least some of the total investment should be allocated to plantations.

65. Other factors that changed the resource base were the clearing of land and the abandonment of farming land.

66. Another participant pointed out that when authorizations were given to create plantations, care needed to be taken to ensure that international companies included a mix of species that would provide raw material for other end-uses. It was also pointed out that various studies were being carried out by the United Nations Environment Programme and the Economic Intelligence Unit on the extent to which preservative treatment represented a danger to the environment.

67. Participants discussed the demand outlook in relation to forecasts for the global and regional production of industrial roundwood to the year 2040.

68. The question was posed as to what influence should be exerted on demand. It was asked whether attempts should be made to reduce the demand and whether some products should be promoted at the expense of others.

IV. REPORT OF THE WORKING GROUP ON ISSUE 2: GREATER UTILIZATION, ON A SUSTAINABLE BASIS, OF WOOD, INCLUDING COMMERCIALLY LESS-ACCEPTED SPECIES AND PLANTATION SPECIES, AS A SOURCE OF INDIGENOUS BUILDING MATERIAL IN HOUSING AND CONSTRUCTION

69. All participants agreed that promotion of the greater use of wood, specifically the use of commercially less-accepted species and plantation species, in housing and other structures was essential to an improvement in living conditions in the developing countries, because building materials in those countries were scarce and tended to be import-dependent. With regard to the ability of workers to use wood as a building material, it was pointed out by one participant that wood was already being used in both the formal and informal sectors of the economy in most developing countries, so that a certain level of skill in its use already existed.

70. Several participants stressed that cultural traditions in many tropical countries posed considerable barriers to the marketing of wooden houses. The remedy, it was suggested, would be to ensure that wooden housing, particularly in demonstration projects, was properly designed and the wood properly selected and, when necessary, treated to ensure that such housing was indeed price-competitive, durable and attractive. It was also observed that people would need to adapt somewhat to the constraints of the wooden house. For example, while it was possible to wash down ceramic tile or concrete floors simply by dumping buckets of water on them, that would not be advisable with wooden floors.

71. In discussing the effects of high winds (typhoons) on wooden houses, one of the participants said that the key to making wooden houses able to withstand high winds was ensuring that the linkages between foundation, walls and roof were sufficiently strong.

72. Participants agreed that producers in the developing countries needed adequate research and development facilities. Such facilities could contribute to the development of new technology, the modification of existing technologies and, most importantly, the dissemination of existing technology. In addition to research capability, training was thought to play an important role in fostering the dissemination of technological information and skills.

73. It was pointed out by one participant that market forces must be effectively employed to ensure that new technologies were introduced and accepted.

74. In the same discussion, participants stressed that all types of training, including management training, had an important role to play in the wood-processing industries in developing countries. Training in the use and maintenance of equipment was thought to be best supplied by equipment manufacturers. In that regard, one of the participants stressed the usefulness of a special training programme provided by wood-processing equipment producers for local customers.

75. One participant pointed out that the expression "commercially less-accepted species" needed to be qualified, at least with respect to the market in question. It had been the experience of the participant that what might be a less accepted, or even an untraded, species in the global market was often a widely marketed species in national or regional markets, and when consideration was further limited to just the local, i.e. a subnational, market, an even larger number of species would be seen to be accepted.

76. A participant from a major timber-exporting country in Latin America noted that over 80 per cent of the country's timber exports had consisted of a single species, mahogany. It was pointed out that without sufficient knowledge of the availability of a particular species, it would be difficult to win a market for it.

77. A representative of an international organization pointed out that assured supplies were of concern mainly to industrial users. The informal market was often only concerned about the local and immediate availability and the price.

78. The advantages of stress grading to tropical timber producers were generally thought to be significant. However, there had been little progress in generating a market for stress-graded timber. That was not to imply that efforts should be abandoned, but that barriers to the development of such a market needed to be overcome. Specifically, the demand and supply sides of the market must develop simultaneously. On the demand side, there must be builders trained in the use of the system, and the advantages of the system to builders must be clear. On the supply side, there needed to be a group of individuals trained in the techniques of stress-grading, and an institutional infrastructure had to be developed to implement the grading system. One participant observed that, ultimately, the preference for stress-graded timber had to come from the customer.

79. Participants generally agreed that wood, properly used, could be a useful construction material. Banks, insurance companies, Governments and other institutions need to modify their policies to enable wood to take its proper place as a building material. Governments needed to ensure that building codes treated wood properly, banks needed to modify their lending policies and insurance companies needed to modify their coverage guidelines to eliminate discrimination against wooden buildings or buildings with wooden components.

V. REPORT OF THE WORKING GROUP ON ISSUE 3: PREREQUISITES FOR THE INTEGRATED DEVELOPMENT OF THE SECONDARY WOOD-PROCESSING INDUSTRY

80. All participants agreed that in the secondary wood-processing sector as in many other economic sectors, no general policies and strategies could be formulated because there were such great differences from region to region and from country to country and even within a single country. However, to provide a framework for the formulation of national policies and strategies, broad categories could be defined, taking into consideration the resources available and the level of development, including factors such as skills, infrastructure and the magnitude of impact of a given industry on world markets.

81. One participant stressed that priority should be given to those countries needing a complete range of policies and strategies. Such an integrated approach would cover the whole wood sector, from the management of resources to secondary processing industries. It would focus on the specific needs of a country, as, for example, the utilization of small diameter wood, the shifting of resources from energy production to value-added products and, where export chances were still limited, the identification of domestic markets.

82. Another participant pointed out that the lack of coordination among ministries dealing with the wood sector was not the only factor hampering the development of the secondary wood-processing industry. In fact, consideration should be given to the setting up of a framework in which enterprises could operate. Master plans aimed at developing some sectors and neglecting others could have a negative impact on the economy. Export restrictions, the participant went on to say, could adversely influence the investment climate since they hindered the free trade of commodities, in this case, of timber logs.

83. On the other hand, some participants said that if within a broader programme of industry reconversion, selected sectors were specifically addressed without distortion of incentives and subsidies, that action would not have negative effects on the economy as a whole.

84. Certainly, one participant added, an investment policy had to be formulated parallel to the policy for the development of a sector. In the case of the secondary wood-processing industry, his country had applied a number of measures: (a) improve the recovery rate of the wood-processing industry to optimize the utilization of raw materials, (b) increase the value-added, (c) create employment, (d) achieve equal income distribution and development throughout the country, (e) increase foreign currency earnings, (f) ensure a continuous supply of raw materials and (g) stimulate downstream processing by a favourable business climate.

85. Participants agreed that only some of the above measures and strategies were transferable; others had to be adjusted to the situation in a given country.

86. One participant mentioned the example of a successful programme for technical cooperation among developing countries in which a timber-exporting country had established joint ventures with a country experienced in machine tool production to solve problems connected with the mass production and marketing of secondary wood products.

87. A number of participants discussed the technology applied to the secondary wood-processing industry and considered the problems related to selection of technology, the role of research institutes in developing new technologies and the adaptation of technology by the enterprises that would use it, as well as technological policies that might increase secondary wood processing.

88. Several participants stressed that different approaches also had to be used in the area of technology, according to the industrial structure of the particular country. Countries where the secondary wood-processing industry was not developed should identify their needs and strengthen the primary processing industry, utilizing technologies suitable for small processing units. If wood was used as a fuel, technological alternatives had to be found to solve the energy problem before wood could be redirected towards industrial processing. A two-stage approach was outlined by one participant. The first stage would involve (a) adopting a medium-term development programme for the development of the industry, (b) undertaking the management of forests, including commercial plantations and the valorization of commercially less-accepted species and plantation species and (c) identifying potential resources for secondary processing. The second stage would entail (a) assessing realistic possibilities for developing secondary processing, (b) identifying the type of technology and cooperation needed in its development/acquisition and (c) formulating programmes with appropriate partners.

89. Other countries might only need to complement and integrate an already existing technological infrastructure: the gap between research and its commercial application could be filled by disseminating to the industry the results achieved by research and development institutions.

90. As to technological policies that would increase secondary processing, some participants suggested that industry as well as associations of manufacturers should attempt to influence government policies so they would meet the needs of the secondary segment. One participant pointed out that the secondary processing industry in his country had reached an advanced level of development over a long period of time in which technology was gradually learned and applied, passing through all the stages of sawmilling and plywood and particle-board production.

91. In discussing the latest sophisticated technologies, concern was expressed for those countries in which technology was still at an infant stage. Those countries, more than others, needed advice on the solution of basic problems rather than on the introduction of technological innovations. It was pointed out that because such technologies had been developed primarily by and for industrialized countries, where high labour costs were a problem, they often aimed at decreasing manpower.

92. The creation of productivity centres that would provide small industries with common services, including training, testing, quality control, assistance in export and management advice, was mentioned by a number of participants as a means of supporting the development of the secondary wood-processing industry. Examples were given of UNIDO projects that could be repeated in countries with similar needs.

93. It was also pointed out that sometimes technologies existed that could solve problems like those relating to the use of plantation species of small diameter. However, technical specifications often limited the use of certain raw materials.

94. UNIDO activities in three areas - the classification of technology, the education of enterprises in the selection of technology and negotiations and contractual arrangements between research institutions and industry - were mentioned and described to the participants.

95. Another channel for spreading information on technology that had proven successful in other countries was the setting up of national consulting engineering offices, which could transfer a knowledge of the technology to local enterprises. The development of a technology and the investment for it depended on the financial resources available in a country. If those were scarce, local investment might be directed towards other basic industries. In such a case, a climate favourable to foreign investment should be fostered.

96. In discussing technologies for commercially less-accepted species and plantation species, participants noted that often those species were not included in forest inventories. That hampered their promotion, which should start with the dissemination of information on their characteristics and qualities and the awareness of their potential commercial value by the local population and loggers.

97. In developing countries there was a large potential for the utilization of commercially less-accepted species and plantation species. However, the quantity of such species was often limited, and they would be marketable only if species having similar characteristics were classified together and presented as a single group. The processing of small-diameter wood posed economic problems that might be solved by channelling investment towards the appropriate technologies. An example of technology tailored to commercially less-accepted species and plantation species and their limitations was the technology for reconstituted panels. In that technology, different species were glued together to obtain a degree of stability that could not be attained using wide boards of one species.

98. The complexity of providing effective training in secondary wood processing was recognized by all the participants. Two of the main obstacles were the inappropriate syllabuses of training courses and the scarcity of qualified trainers. On-the-job training to enable industry to train specialists and technicians locally was mentioned as a possible solution, as was the production and diffusion by international organizations of training material such as simple manuals and videos. Mobile training units, even for training in maintenance, were mentioned as a flexible way to reach small enterprises. It was pointed out that a training strategy should start with the identification of training needs at the country level, followed by the formulation of appropriate curricula. The training of technicians such as foremen, saw doctors, drier operators, graders and quality controllers should always be included in the overall training programmes.

99. To orient developing countries in the area of training, a compendium of opportunities in secondary wood processing should be prepared. The compendium would include information on the institutions providing training and would give a short description of the programmes offered. It could be a joint undertaking by several international and national organizations.

100. All the participants agreed that the problem of matching a student's qualifications to the needs of industry should be analysed. The role of national professional associations in guiding Governments and governmental training institutions in the formulation of programmes was stressed in that respect.

101. Another means of adjusting training to the needs of industry might be to involve industry in the content and quality of the training: it could, for instance, be asked to contribute updated equipment and technologies for the practical training of students. It was, however, pointed out that it would not be easy to involve industry in training efforts, because commercial enterprises preferred to invest in profitable, short-term operations, and training had a long payback period.

102. A participant from an industrialized country pointed out that because the supply of unprocessed timber was dwindling, some importing countries might have to increase their imports of processed timber products, necessitating closer linkages between purchaser and producer to ensure the quality of the product. Those linkages could involve the provision of training by the importer to the exporting manufacturing enterprises.

103. A number of participants said that standards could act as barriers to the import of products from developing countries. The interests of developing countries should be protected and their views represented at international gatherings dealing with standards harmonization in the European market.

104. As one participant pointed out, the market orientation of the secondary wood products industry meant that the most important standards were those embodied in the agreements between buyers and producers that regulated the import of furniture, not the legislation, codes and regulations that applied to the structural wood products used by the construction industry.

105. Quality control should be included in training programmes since quality and the ability to meet international standards were essential for improving the competitiveness of a product in foreign markets. Labels that indicated conformity to specifications on size, performance and shape also needed to indicate comformity to the environmental requirements of some importing countries. However, to be effective, a labelling system had to be backed up by trained inspectors and by a control system on the inspectors themselves.

106. The Consultant, who had consolidated the study on the maritime transport of wood and wood products (ID/WG.506/2), described ways to reduce transport costs and spoke of UNCTAD efforts to set up shippers' councils. In respect to the transport of wood and wood products, the advantages of having ships built to serve a specific trade, such as the logs trade, were pointed out. However, individual countries that did not export large volumes of wood would not be able to justify purpose-built ships.

107. One participant pointed out that owing to the great distances between the forests and the ports, the costs of transporting wood were extremely high, especially when a combination of road, rail or river transportation was called for. The impact of surface transport costs in the wood sector, the participant suggested, could become the subject of a UNIDO study.

108. Another participant suggested bearing in mind the recommendations of the Third Consultation on the Capital Goods Industry with emphasis on Rural Transport Equipment (ID/370, ID/WG.487/4), since they provided a basis for action in the transport-related programmes of various industry sectors.

109. The investment promotion activities and programmes of UNIDO were described in detail to the participants since they had stimulated interest and requests for information.

110. Several participants declared that developing countries needed to receive assistance in establishing joint ventures with counterparts in developed countries. Pilot operations bringing together potential partners and assisting them in the formulation of joint venture agreements were mentioned as being of particular benefit to developing and developed countries. The plant-level cooperation programmes carried out by UNIDO, as well as other programmes such as assistance in establishing a joint venture, were mentioned to the participants.

111. Some participants expressed concern about the difficulty of finding investors interested in small-scale operations. Pilot projects could help to draw potential investors towards that type of venture.

112. Some participants reaffirmed what had been said in the course of the previous discussion: in shifting from primary to secondary products, the linkages between producer and end-user became closer. For secondary wood products, the best source of information on product specifications was the purchaser. Information on the target market had to be available.

113. In the sensitive matter of marketing tropical timber in countries where environmental concerns were a barrier to import, one participant remarked that the positive, environment-friendly aspects of wood had not been stressed enough nor had enough concrete information on its utilization been provided. Joint action in that matter by organizations such as FAO, UNIDO and ITTO would be appropriate.

114. Finally, the possibility was raised of setting up for the wood sector, as had been done for other sectors, a panel of highly specialized experts who would meet regularly to discuss concrete issues and the implementation of action-oriented programmes. The example of the panel set up for the leather industry, composed of experts from different regions and representatives of international organizations, was brought to the attention of the participants since the positive results that panel had achieved could probably also be obtained in the secondary wood-processing sector.

Annex I

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Issue papers

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Report of the Regional Meeting for Latin America in preparation for the Second Consultation on the Wood and Wood Products Industry, Guarujá, Brazil, 4-6 December 1989	ID/WG.500/3(SPEC.)
Report: Expert Group Meeting on the Wood and Wood Products Industry, Vienna, Austria, 4-7 December 1989	IPCT.105 (SPEC.)
Report: Global Preparatory Meeting for the Second Consultation on the Wood and Wood Products Industry, Nairobi, Kenya, 24-27 April 1990	ID/WG.500/9(SPEC.)
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